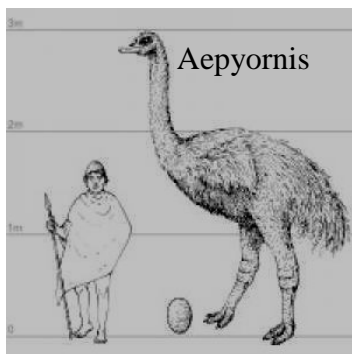
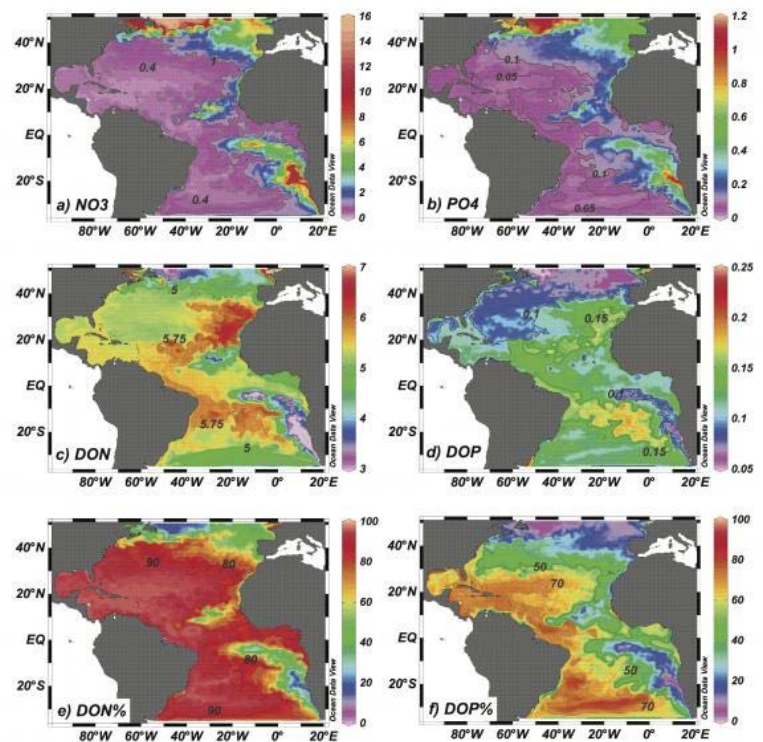


# Penzance B.S.A.C. Conservation Officer's Report April 2010

Environmentalists and Fishing Community can both win according to experts who have found that if you have the key spatial (location) information on fish, you can put the Marine Protected Areas in the right places thus increasing conservation and making the fisheries more profitable. Information on fish, from spawning habits to oceanographic models that show currents, gives the experts the data needed for both conservation and increased fishing. Co-authors of the team of experts studied the location of fish by looking at what ecologists call 'sources' and 'sinks.' In source areas, the ocean is very productive and lots of fish spawn there. Larvae are produced and they are swept over to the sink and never leave. What needs to be done is to close the source areas to fishing, and only fish in the sink, this way you get much higher economic value and much better conservation, but you need to know where the sources and sinks are to do this. The spatial information has the potential to change management approaches.

Tiny marine plants called phytoplankton living in the sunlit surface waters of the ocean produce organic matter through the process of photosynthesis, thereby drawing carbon dioxide down from the atmosphere. Much of this organic matter is recycled but some of it sinks as 'marine-snow' to the deep ocean. This is known as the biological carbon pump, and it helps to significantly reduce the CO<sub>2</sub> released by the burning of fossil fuels that would otherwise accumulate in the atmosphere. In addition to light, phytoplankton requires nutrients for growth. However, inorganic nutrients are in short supply in vast areas of the oceans known as oligotrophic regions. This means that phytoplankton must get the nutrients from somewhere else and therefore understanding the sources and distribution of nutrients is of major interest to oceanographers. Scientists have studied the distribution of dissolved organic Nutrients in eight research cruises in the Atlantic. In this way they were able to cover large tracts of The Atlantic Ocean and find the distribution of dissolved organic nitrogen (DON) and dissolved organic phosphorous (DOP) and patterns emerged showing that differences exist between the North and South Atlantic. DON and DOP concentrations are lower in the North Atlantic, and these differences are more striking in the case of DOP which is very low in the North Atlantic subtropical Zone.



In a world first, an international team of researchers have successfully isolated ancient DNA from fossil eggshell remains of extinct birds. They were really surprised to discover that DNA is well-preserved in fossil eggshell, particularly the now extinct heaviest bird to have existed, the elephant bird called Aepyornis. Researchers have tried unsuccessfully for years to isolate DNA from fossil eggshells, it turned out that they were using a method designed for bone and that was not suitable for eggshell. The new study describes how DNA up to 12,000 years old is an excellent source of ancient DNA. Fossil Eggshells are frequently discovered from deposits across the globe and have been extensively used as a tool for radiocarbon dating and as a proxy to study past environments.

Bottlenose Dolphins were seen 6 times during March, 5 sightings of the north coast pod, between Porthgwarra and St Ives, and one of the south coast pod, near Trefusis Point Falmouth area.. 3 sightings of dolphins on the north coast were probably also Bottlenose. There was one sighting of Common Dolphins, a pod of about 25 off Gunwallow Church Cove, on the 15th. Five sightings of Harbour Porpoises, were all in the Porthgwarra and Runnelstone area. Grey Seals were seen at Cape Cornwall and St Ives.